
वाहक सुरक्षा हेतु अनुशंसित रीति संहिता
भाग 3 पट्टा वाहक और फीडर
(दूसरा पुनरीक्षण)

Code of Recommended Practice for
Conveyor Safety
Part 3 Belt Conveyors and Feeders
(Second Revision)

ICS 53.040.10

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on recommendation of the Continuous Bulk Conveying, Elevating, Hoisting Aerial Ropeways and Related Equipment Sectional Committee, had been approved by the Mechanical Engineering Divisional Council.

This Indian Standard (Part 3) first published in 1974 and subsequently revised in 1986. It covers the recommended practice to be adopted in the safe use of conveyors and conveying machinery used for transportation of bulk materials or unit loads.

This revision has been taken up to keep pace with the latest technological developments. In this revision, the standard has been brought into latest style and format of Indian Standards, and references to Indian Standards, wherever applicable have been updated.

The code of recommended practice for conveyor safety is in eight parts. This standard (Part 3) covers the safety requirements in belt conveyors and feeders. Other parts in this series under the general title are as follows:

Part 1 General information

Part 2 General safety requirements

Part 4 Vibrating conveyor/feeder

Part 5 Apron conveyors/apron feeders

Part 6 Selection, training and supervision of operators

Part 7 Inspection and maintenance

Part 8 Flight conveyors

The composition of the committee responsible for the formulation of this standard is listed in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***CODE OF RECOMMENDED PRACTICE FOR CONVEYOR SAFETY****PART 3 BELT CONVEYORS AND FEEDERS***(Second Revision)***1 SCOPE**

1.1 This standard (Part 3) covers the safety requirements for belt conveyors and feeders. These requirements are in addition to the information given in IS 7155 (Part 1) and the general safety requirements given in IS 7155 (Part 2).

1.2 These safety requirements shall apply to conveyors and feeders for loose bulk materials or unit loads using an endless moving belt (rubber, canvas, steel, plastic, wire mesh, etc) as the carrying and conveying medium and excludes the structures to which such equipment is affixed.

1.3 The belt may be supported by free-running idlers or suitable flat surfaces.

2 REFERENCES

The standards listed below, contain provisions which, through their reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards given below:

<i>IS No.</i>	<i>Title</i>
IS 7155	Code of recommended practice for conveyor safety:
(Part 1) : 1986	General information (<i>first revision</i>)
(Part 2) : 1986	General safety requirements (<i>first revision</i>)

3 TERMINOLOGY

3.1 Specific Safety Requirements — Besides statutory and other requirements relating to safety in general, specific safety requirements shall be observed at the following stages.

- During the construction stage (design and manufacture);
- During the installation stage (design, commissioning and entry into service); and
- During the utilization stage (operation and maintenance).

3.2 In the Construction Stage (Design and Manufacture)

3.2.1 Belts shall be of sufficient width to suit the specific load and material to be conveyed. Guiding and centering devices shall be provided, if necessary, at the feed points.

3.2.2 In conformity with the requirements in **4.2.8** of IS 7155 (Part 2), belt idlers and pulleys shall be completely guarded at the in-running nips and pinch points (feed, tension, convex curve points, etc).

3.2.3 In addition to the requirements in **4.2.4** and **4.2.5** of IS 7155 (Part 2), relating to inclined conveyors, a safety device shall be provided (longitudinal rods, grill with articulated bars, etc) if it is normally foreseeable that material could be thrown out (throwing out caused, for instance, by a stop under the load or irregular loading).

3.2.4 As permitted by the requirement in **4.2.4** of IS 7155 (Part 2) a safety device is not compulsory when, simultaneously, the mass of each unit load is below 50 kg and when the total design load of material on the sloping part of the appliance is below 500 kg.

3.3 During the Installation Stage (Design Commissioning and Entry into Service)

3.3.1 Belt conveyors shall be erected and aligned with care. This applies not only to the frame work, but also to the mechanical parts and belt.

3.3.2 Belt conveyors shall be fed evenly, preferably by feeder or by a carefully designed feed chute.

3.3.3 The openings of feeding or transfer hoppers and chutes shall be guarded if normally accessible to operating personnel. It is recommended that inspection doors be provided on large hoppers and chutes.

3.3.4 In pursuance of the requirements laid down **4.3.10** of IS 7155 (Part 2), suitable protection shall also be provided against accidental dropping of material adhering to the return belt.

3.3.5 Counterweight tension devices shall be guarded at points normally accessible to operating personnel. Guards shall prevent access to the space

directly below the counterweight; in the absence of these guards, blocking devices shall be provided.

3.4 During the Utilization Stage (Operation and Maintenance)

3.4.1 In addition to the requirement in **4.4.2** of IS 7155 (Part 2) the adjustment and maintenance in good running order of the belt and pulley cleaning devices shall be carried out regularly.

3.4.2 In addition to the requirement in **4.4.4** of IS 7155 (Part 2) the manual cleaning of pulleys, idlers and other parts, necessitated by the build-up of material or any other cause, shall only be undertaken when the equipment is at rest, and after rendering the starting devices inoperative.

3.4.3 In compliance with the requirement in **4.4.5** of IS 7155 (Part 2) the user shall be particularly careful to ensure a regular feed, avoiding, even momentarily, the overloading of the appliance.

3.4.3.1 In particular, the user shall not change the feeding points without previously consulting the manufacturer/constructor.

4 SPECIAL EQUIPMENT (ADDITIONAL REQUIREMENTS)

Generally the requirements for belt conveyors apply to the special equipment(s).

4.1 In the Construction Stage (Design and Manufacture)

4.1.1 Additional travelling equipment, such as travelling

tripper, scraper, travelling feed hopper, and feeder, whether self propelled or manually controlled, shall be fitted with the guide idlers so as to minimize effects of undue belt sway.

4.1.2 Wheels or rollers of mobile conveyors (shuttle conveyors) and of additional travelling equipment referred to in **4.1.1** shall be guarded at working points accessible to service personnel under normal working conditions.

4.1.3 It is recommended to reduce, as far as possible, projecting parts of mobile conveyors (shuttle conveyors) and additional travelling equipment (travelling tripper, scraper, travelling feed hopper, feeder, etc).

4.1.4 Whenever it is necessary for an operator to remain on the travelling equipment, a platform shall be provided and so designed as to prohibit any accidental contact with mobile components or any part of the fixed installation.

4.2 During the Installation Stage (Design, Commissioning and Entry into Service)

4.2.1 Safety devices shall be provided to limit the travel of additional travelling appliances and equipments.

4.2.2 Where the speed of a mobile appliance or equipment travelling alongside a traffic gangway is designed to exceed 0.10 m/s an audible and/or visible warning device shall be operated prior to (and, where applicable, during) movement of the appliance or equipment.

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

Continuous Bulk Conveying, Elevating, Hoisting Aerial Ropeways and Related Equipment Sectional
Committee, MED 06

<i>Organization(s)</i>	<i>Representative(s)</i>
Rites Limited, Gurugram	SHRI D.MAJUMDAR (Chairperson)
CSIR — Central Institute for Mining and Fuel Research, Dhanbad	SHRI DEBASHISHBASAK SHRI GIRENDRA M. PRASAD (<i>Alternate</i>)
Conveyor and Ropeway Services Private Limited, Kolkata	SHRI S. SHEKHARCHKRAVARTY SHRI KAMAL KUMAR BOSE (<i>Alternate</i>)
Damodar Ropeways & Infra Limited, Kolkata	SHRI D. L. DAS
Directorate General Factory Advice Service and Labour Institutes, Mumbai	SHRI G. P. NIJALINGAPPA SHRI H. M. BHANDARI (<i>Alternate</i>)
Directorate General of Mines Safety, Dhanbad	SHRI D. B. NAYAK SHRI VIJAY YADAORAOBARAPATRE (<i>Alternate</i>)
Durgapur Steel Plant, Sail Durgapur	SHRI SANJAY KUMAR SHRI DEEPAK BISWAL (<i>Alternate</i>)
Indian Association of Amusement Parks and Industries, Mumbai	SHRI PRADEEP SHARMA SHRI ANIL PADWAL (<i>Alternate</i>)
Lepton Projects Private Limited, Ghaziabad	SHRI SANJAY KUMAR SHRI PIYUSHRATHI (<i>Alternate</i>)
Mecon Limited, Ranchi	SHRI SANJOYBHATTACHAR SHRI AMIT PAL (<i>Alternate</i>)
Ministry of Ports, Shipping and Waterways, New Delhi	SHRI ANIL PRUTHI SHRI RAMJI SINGH (<i>Alternate</i>)
Ntpc Limited, New Delhi	SHRI O. P. KALIA
National Mineral Development Corporation, Hyderabad	SHRI ALOK KUMAR MEHTA SHRI S. SURENDER (<i>Alternate</i>)
Phoenix Conveyor Belt India Private Limited, Kolkata	SHRI RAJEEV SHARMA SHRI ASOKE KUM GHOSH (<i>Alternate</i>)
Project and Development India Limited, Noida	SHRI NARENDRA SINGH
Rites Limited, Gurugram	SHRI DINESH KUMAR
Ropeway and Resorts Private Limited, Kolkata	SHRI BIPLAB DAS SHRI SUDIPTAKRISHANA (<i>Alternate</i>)
Tata Consulting Engineers Limited, Navi Mumbai	SHRI SHIREESH S. SWAMI (<i>Alternate</i>)
UshaBreco Limited, Ghaziabad	SHRI MANOJPANWAR SHRI SANJEEV DHARIWAL (<i>Alternate</i>)
Usha Martin Limited, Ranchi	SHRI SUBRATA DUTTA SHRI SANDEEP JAISWAL (<i>Alternate</i>)
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Member Secretary
SHRI AMAN DHANAWAT
SCIENTIST 'B'/ASSISTANT DIRECTOR
(MECHANICAL ENGINEERING), BIS

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This Indian Standard has been developed from Doc No.: MED 06 (20449).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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